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INTELLIGENCE REPORT

RAILROAD CONSTRUCTION IN COMMUNIST CHINA SINCE THE COLLAPSE OF THE "LEAP FORWARD"

DIRECTORATE OF INTELLIGENCE

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RAILROAD CONSTRUCTION IN COMMUNIST CHINA
SINCE THE COLLAPSE OF THE "LEAP FORWARD"*

Summary and Conclusions

Except for a partial resumption of the effort to connect southwest China directly with the main rail system in the country, construction of new main line railroads in Communist China remains in a state of general stagnation. Although the renewed construction in the southwest will eventually augment the Chinese capability to support military activities in southeast Asia, it is doubtful whether any of the new lines can be opened to traffic within the next few years.

Following implementation of the retrenchment policy in early 1961, railroad construction was either halted or slowed in every region in the country. Economic difficulties forced the Chinese to abandon thousands of kilometers of partly completed lines, to slow or halt double tracking of trunk lines, and to shelve plans for construction of proposed new lines. Since 1961, therefore, the annual volume of construction of main and branch lines has dropped approximately 80 percent below previous years, from an average annual completion rate of about 1,100 kilometers (km) per year during the First Five Year Plan (1953-57) and the "leap forward" (1958-60) to about 250 km per year during 1961-64. The Chinese have continued to work on short spur lines to military, industrial, and mining facilities during the retrenchment period, but the ambitious program of the late 1950's to increase the length of the national network by about 40 percent has suffered a setback that will take years to overcome.

Although construction has not been resumed on the majority of abandoned railroad projects, reliable evidence indicates that in 1963 and 1964 the Chinese did resume work on some lines. Strategically, the most important area of current activity is in southwest China, which borders on North Vietnam, Laos, and Burma and which lacks a direct railroad connection with the national network. During the past 2 years the Chinese resumed work in the southwest on two or three lines, all of which were started originally in 1956-58 but were suspended in 1961-62 before completion. Because of the rugged terrain and the amount of construction remaining to be done, it is unlikely that any of the lines can reach Yunnan Province within the next few years. It is apparent, however, that the southwest has been designated a priority region, for it is the only area in the country where a large-scale program is underway to construct new main lines.

* The estimates and conclusions in this report represent the best judgment of this Office as of 1 May 1965. Unless otherwise indicated, railroad lines are standard-gauge lines.

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In addition to the resumption of work in the southwest, the Chinese have renewed construction of a few railroad projects in other parts of the country. In Kiangsi Province in southeast China, for example, work is actively in progress on a 120-km branch line running from the vicinity of Hsiang-t'ang toward the town of Lo-an.*

in late 1963 that military engineers were constructing a line in Kiangsi Province to support uranium mining. the existence of the line,** although construction has not yet progressed far enough to determine where the branch will ultimately terminate.

Another project that has been reactivated in recent years is the spectacular bridge that will span the Yangtze River at Nanking. This double-deck railroad and highway structure is considerably longer than the famous Wu-han bridge built in the 1950's with Soviet assistance. When completed, the Nanking bridge will replace a rail ferry, the last major bottleneck on the heavily used trunk line between Peiping and Shanghai.

Other areas of active railroad construction in Communist China include a possible urban bypass around Tientsin, a little double tracking in Shantung Province, and reconstruction of the single-track line between Shanghai and Nanking. Work is also continuing on lines to support the forestry industry, which is one of the highly publicized "weak links" in the economy. This effort is largely centered in the mountain ranges in northeast China that border the Soviet Union and North Korea.

* For coordinates of place names, see Appendixes A and B.

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I. Introduction

During the 3 years of the "leap forward" (1958-60) the Chinese Communists launched a massive program to expand the railroad network on the mainland, which at the end of 1957 had only 29,900 km of track. Construction was begun on approximately 11,400 km of new main and branch lines, and 5,900 km of double track was under construction for existing lines. If the program had been completed, the 11,400 km would have expanded the rail network in Communist China by about 40 percent. The total cost of the new lines and the double track would have been about 10 billion yuan (US \$4 billion).*

Since the collapse of the "leap forward" in 1960 the Chinese have been conspicuously silent on the progress of railroad construction in China, strongly implying that the ambitious program started during the late 1950's has been abandoned.

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In this report, emphasis is given to a discussion of (1) the important lines in western China and (2) the priority areas in the country where construction is actively underway. Detailed information is presented in Appendixes A and B on less important lines and on the numerous lines where construction has been suspended. For ease of exposition, Communist China has been arbitrarily divided into five regions: northwest, southwest, north, southeast, and Manchuria (northeast). The east is divided from the west by the 108th meridian and the north from the south by the 30th parallel, and Manchuria includes all of the territory northeast of Peiping (see Figure 1, inside back cover).

II. General Trends1. Effects of the Retrenchment in Capital Construction

The nationwide retrenchment in capital construction that was forced on the Chinese Communists in 1961 by economic difficulties led to a sharp cutback in new railroad construction,

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At the time of the retrenchment, there were hundreds of kilometers of line where construction of the roadbed had reached an advanced stage and where the approaches, abutments, and piers for numerous bridges had been completed; but on many projects the ties and track had not been laid and bridges were without superstructures

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At present, therefore, the landscape of China is extensively

* Yuan were converted to dollars at the estimated rate of exchange of 2.46 yuan to US \$1.

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scarred by abandoned roadbeds that have been eroded by the elements, that have been overgrown by weeds, or that have been reclaimed and cultivated by the peasants.

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2. Estimate of Railroad Construction

As illustrated in the table below, the annual increment in kilometers of new track placed in operation during the 4-year period since the beginning of 1961 dropped approximately 80 percent below previous years, from an average of about 1,100 km per year during the First Five Year Plan and the "leap forward" to approximately 250 km per year during the retrenchment period. Moreover, of the 11,400 km of new track started during the "leap forward," only 2,200 km had been placed in operation by the end of 1964, and most of this was finished before the

Estimated Length of New Railroad Line Placed in Operation
in Communist China, a/
1953-64

Period	Kilometers	
	Total	Average per Year
First Five Year Plan (1953-57)	5,340	1,070
"Leap forward" (1958-60)	3,430	1,140
Retrenchment period (1961-64)	984	246

a. Including main lines and branch lines but excluding spur lines to industrial facilities, double tracking, and narrow-gauge forestry lines. The estimated length of standard-gauge track opened to passenger travel at the end of 1964 was 34,300 kilometers. Data have been rounded to three significant digits.

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retrenchment.*

III. Railroad Construction, by Area

Since the collapse of the ill-fated "leap forward" in 1960, the Chinese Communists have been very selective in allocating resources for capital construction. Evidence indicates that only construction projects with a high economic or military priority were permitted to continue during the 4-year period 1961-64. This pattern has been followed in construction of new railroad lines, as well as in other sectors of the economy. Only those lines that are required to fill an important need have been constructed in recent years, while work on numerous marginal lines has been suspended.

During the first 2 years of the retrenchment, the decrease in new railroad construction was so severe that no clear pattern developed that would help pinpoint areas of overriding priority. Either construction was halted or the speed of work was greatly reduced on all lines in the country, with the possible exception of narrow-gauge forestry lines and short spurs to mining, industrial, and military facilities. Since 1963, however, construction has resumed on a few lines, thus providing some indication of areas in the country that are favored by either an economic or a military priority.

1. Southwest China

a. Background

Since coming to power, the most ambitious effort exerted by the Chinese Communists in the field of new railroad construction has been their attempt to build lines running into southwest China, which borders on North Vietnam, Laos, and Burma. The extremely rugged terrain in the underdeveloped southwest poses difficult engineering problems, which result in high-cost construction. For example, the average cost of building railroads in flat terrain in China is between 400,000 and 500,000 yuan per kilometer, whereas the average cost in the southwest is over 1 million yuan per kilometer. Nevertheless, new lines are needed to help open the area to economic development and to eliminate the necessity of shipping goods to Yunnan Province via the meter-gauge system in North Vietnam. In the late 1950's, therefore, the Chinese started construction of five main lines running into the southwest with a combined length of roughly 3,700 to 3,800 km. These main lines are the ones from Ch'eng-tu to K'un-ming, from Nei-chiang to K'un-ming, from Chungking to Kuei-yang, from Kuei-yang to K'un-ming, and from Hsiang-t'an to Tu-yun.

* The data in the table, above, include railroads started before 1958 as well as those started during the "leap forward" and the retrenchment period.

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Although active construction of the railroad network in the southwest started almost a decade ago, none of the five lines has yet been completed. From 900 to 1,000 km of track had been laid by the time of the retrenchment in early 1961, and work probably was suspended during the following 2 years. In 1963-64, however, the Chinese apparently resumed work on three of the five lines. Fragmentary reporting prevents estimation of a completion date for the lines, but it is apparent that railroad construction in the southwest presently enjoys a high priority. It is the only area in the country where the Chinese are actively engaged in a major program to construct new main lines.

b. Ch'eng-tu - K'un-ming Line

The longest railroad under construction in the southwest is the 1,070-km line running from the new industrial city of Ch'eng-tu in the Szechwan Basin to K'un-ming, the capital of mineral-rich Yunnan Province. Since the start of construction in 1958, the progress on this north-south artery has been slow. By 1961, only 175 km of track had been laid -- a 125-km section of meter-gauge track between K'un-ming and the coal-producing center at I-p'ing-lang and a 50-km section of standard-gauge track between Ch'eng-tu and the small town of P'eng-shan. The K'un-ming - I-p'ing-lang section is a restored branch of a previously existing meter-gauge line running from Kwangsi Province to K'un-ming via North Vietnam. The Chinese plan to convert this branch to standard gauge when the new main lines in the southwest are linked to the national rail system. Between 1961 and 1963 there was little progress on the Ch'eng-tu - K'un-ming line, and work probably was completely halted during this period. By 1964, however, construction had been resumed.

The Ch'eng-tu - K'un-ming line probably cannot be completed in less than 4 or 5 years, even with a maximum construction effort on the part of the Chinese. Many tunnels still have to be constructed along the projected route, and, because only a limited number of people can work a tunnel face at one time, digging tunnels is the most time-consuming activity in railroad construction.

c. Kuei-yang - K'un-ming Line

A second railroad presently under construction in the southwest is an east-west line to run between Kuei-yang in Kweichow Province and K'un-ming in Yunnan Province. It is projected to extend roughly 420 km west from Kuei-yang, joining the planned Nei-chiang - K'un-ming line in the vicinity of either Hsuan-wei or Wei-ning. (For a discussion of the Nei-chiang - K'un-ming line, see e, below.)

During the 7-year period since construction started in 1958, only a 100-km section of the Kuei-yang - K'un-ming line has been opened to traffic -- the section running from Kuei-yang to the town of An-shun. Work was probably halted on the line, following implementation of the

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retrenchment policy in 1961, but in 1963 or 1964 the Chinese resumed construction. The uncompleted part of the line, however, traverses rugged terrain, and the line probably could not be placed in operation during the next few years.

d. Chungking - Kuei-yang Line

A third line in the southwest that may be under construction is a north-south line, roughly 480 km long, between Chungking in Szechwan Province and Kuei-yang in Kweichow Province. Construction started in 1956 and continued until 1961, when approximately 190 km of track had been completed -- a 150-km section between Chungking and a point about 10 km north of Sung-k'an and a 40-km section between Kuei-yang and Cha-tso.

Although three-fourths of the earthwork was completed before the retrenchment, construction of the Chungking - Kuei-yang line was halted in 1961. [redacted] work had probably resumed by 1963, [redacted] The present stage of construction, however, is difficult to estimate [redacted]

This north-south line may be placed in operation before any of the other railroads in the southwest, but the Chinese must still complete the east-west line between Kuei-yang and K'un-ming before traffic can move directly from Szechwan Province to Yunnan Province.

e. Nei-chiang - K'un-ming Line

One of the earliest rail projects undertaken by the Chinese in the southwest was an 830-km line to run from Nei-chiang in Szechwan Province to K'un-ming in Yunnan Province. From the K'un-ming terminus the line was projected to parallel an existing meter-gauge line as far as Chan-i before turning north through some of the most formidable terrain in the area. The Chinese have claimed that the terrain is so rugged that two-fifths of the entire length of the Nei-chiang - K'un-ming line will be bridges, tunnels, and culverts -- the most difficult and expensive aspects of railroad construction.

Since the start of construction in 1956, only 310 km of track have been laid on this north-south line, a 130-km section between Nei-chiang and An-pien and a 180-km section between K'un-ming and Chan-i. The roadbed for the K'un-ming - Chan-i section was constructed to standard-gauge specifications, but the track may have been temporarily laid to meter-gauge width so that rolling stock in Yunnan Province could be used to support the railroad construction program.

In about 1961, construction was apparently halted on the uncompleted portion of the Nei-chiang - K'un-ming line, and there is no indication that work has been resumed. The extremely rugged terrain

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along the proposed route of the line may have prompted the Chinese to postpone construction indefinitely in order to channel all available resources to other lines in the area that cross relatively less difficult terrain.

f. Hsiang-t'an - Tu-yun Line

To complete the ambitious program to link the southwest with the main rail system, in 1958 the Chinese started construction of an east-west line between Hsiang-t'an in Hunan Province and Tu-yun in Kweichow Province. This line was projected to extend for approximately 870 km and to provide a more direct link between southeast and southwest China than the present route through Liu-chou.

Construction of the Hsiang-t'an - Tu-yun line was apparently halted about 1961 and probably is still a casualty of the retrenchment policy. Only a 170-km section running west from Hsiang-t'an was completed before 1961, and there is no evidence that work is actively in progress on the remaining sections of the line. Moreover, if the Chinese ever resumed construction, placing the line into operation would take a number of years.

2. Northwest China

a. Lan-chou - Sinkiang Line

In late 1952 the Chinese started construction of a new line that was planned to extend from the industrial center at Lan-chou in Kansu Province to Urumchi in Sinkiang Province and westward to the Sino-Soviet border, a total distance of approximately 2,350 km. When completed, this line was intended to open the distant northwest to economic development and to provide an additional railroad link with the USSR. (China presently has two direct railroad connections with the USSR in Manchuria and two indirect connections, one via Mongolia and one via North Korea.)

Although construction of the Lan-chou - Sinkiang line started more than 12 years ago, the line presently terminates at Urumchi, some 450 km short of the Sino-Soviet border. By the time the retrenchment in capital construction was implemented in January 1961, the Chinese had completed about 1,750 km of track and were still 150 km from Urumchi.*

The USSR, on the other hand, completed a 300-km extension of its Turkestan-Siberian Railroad broad-gauge line between Aktogay and the border as early as 1959. After completing its line to the border,

* The 240-km branch line to the Shuang-ch'eng-tzu missile test site was probably started in 1956 or 1957, after the main line reached the point of divergence near the small town of Ch'ing-shui-pao.

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the Soviet Union apparently wanted to extend its broad-gauge system to Urumchi, 450 km inside Chinese territory, where the Soviet Union hoped to establish a transloading point with the Chinese system. In 1954 a change-of-gauge transloading area was established 300 km inside China at Chi-ning for traffic transiting Mongolia, but in Sinkiang, where friction has historically existed between the two countries, the Chinese refused to allow a second intrusion of the Soviet rail system on their territory.

During the retrenchment period, the speed of construction on the unfinished part of the Lan-chou - Sinkiang line was sharply reduced. The line ultimately reached Urumchi in late 1962, but during the final 2 years of construction the rate of completion averaged only 75 km per year -- a rate that was about 65 percent below the average of 220 km per year during the 8-year period from late 1952 through January 1961. After 1961, moreover, construction was suspended on the 450-km section between Urumchi and the Soviet border, even though considerable work had been completed on the roadbed. The Chinese may eventually extend the line farther west to the center for producing and refining oil at Tu-shan-tzu, but at present they probably do not intend to extend the line beyond that point to the border.

b. Lan-chou - Tsinghai Line

Construction of the 1,200-km Lan-chou - Tsinghai line was started in 1958 to provide a railroad link between China proper and the remote multinational province of Tsinghai. This line was projected to run from the city of Lan-chou in Kansu Province into the Tsaidam Basin in Tsinghai Province, where a second line was planned for construction running to Lhasa in Tibet.

Construction of the Lan-chou - Tsinghai line continued for 2-1/2 years, from mid-1958 until early in 1961, when work was abruptly halted. During the period of construction, track was laid to the vicinity of a large unidentified industrial complex that is under construction near Hai-yen, a small town 317 km west of Lan-chou near the eastern end of Lake Koko Nor.

During the 4-year interval since the beginning of 1961, the only construction on the Lan-chou - Tsinghai line has been the extension of a spur leading from the vicinity of the industrial complex toward the shore of Lake Koko Nor.

Work has not yet resumed on the main line that was projected to skirt the north shore of the lake and terminate in the Tsaidam Basin.

3. North China

Construction on most of the railroad projects in north China was completely halted following the collapse of the "leap forward,"

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25X1 with the exception of short spurs to mining and industrial facilities and a possible bypass around Tientsin. The only major railroad project presently under construction in north China is the spectacular bridge spanning the Yangtze river in Nanking [redacted] 25X1
[redacted] This bridge is a double-deck railroad and highway structure that will have a water span alone of approximately 1,500 meters -- considerably longer than the famous Wu-han bridge near Hankow.

Construction of the Nanking bridge originally started about 1959, but reports indicate that work was temporarily halted in 1961 or 1962. Since resumption of work, probably in 1963, construction has progressed slowly. The Chinese may have encountered either engineering difficulties in placing the piers or problems in fabricating large steel members for the superstructure. The Nanking bridge, however, is one of the few large-scale railroad projects currently under construction in the country; which suggests that the Chinese place high priority on eliminating the Nanking - P'u-k'ou railroad ferry -- the last major bottleneck on the heavily used trunk line between Peiping and Shanghai.

4. Southeast China

25X1 Following the pattern in the rest of the country, railroad construction in southeast China was generally halted after 1961. Work has not yet resumed on most of the suspended lines, but [redacted] 25X1

[redacted] the Chinese are in the process of constructing one new branch line in Kiangsi Province. This new line originates near the town of Hsiang-t'ang and is operational for roughly 60 km, from a point located at 28 22 N 115 56 E to the vicinity of 28 00 N 116 17 E. From the latter point, construction continues west-southwest for an additional 60 km to approximately 27 44 N 115 53 E, near the town of Lo-an. [redacted] 25X1

25X1 [redacted] the military is rushing the construction of a line leading to Lo-an, where important uranium mines are located. [redacted] 25X1

25X1 [redacted] [redacted] 25X1

An additional area of active railroad construction in southeast China is in Fukien Province. In 1958 the Chinese announced that work had started on a 150-km branch line running from Chang-p'ing to the coastal city of Ch'uan-chou, directly across from Formosa. This line was not completed, and evidence indicates that construction never progressed much beyond a preliminary stage. During 1964, however [redacted] 25X1

25X1 [redacted] work was in progress on a spur line near Mei-shui-k'eng, a small town 20 km south of Chang-p'ing. The spur runs to a mining area on the proposed route to Ch'uan-chou, but it is too early to tell whether or not it will be extended to the coast as a branch line.

5. Manchuria

In recent years the Chinese have released a number of statements alluding to their railroad construction effort in Manchuria. New lines are needed in Manchuria mainly to help strengthen one of the highly publicized "weak links" in the economy -- the forestry industry. The Chinese have long suffered from acute shortages of timber, and during the last few years they have been attempting to improve transportation facilities in forest regions to speed the shipment of logs and to exploit previously inaccessible areas.

Although most of the newly constructed lines in Manchuria are narrow gauge, the Chinese also have constructed some standard-gauge lines. The most notable areas of standard-gauge construction have been in the Greater and Lesser Khingan mountain ranges bordering the Soviet Union and in the Chang-pai mountains bordering North Korea. Since 1961, for example, the Chinese have worked on a few hundred kilometers of standard-gauge line in the Kan-ho area in the Inner Mongolian Autonomous Region, in the Nen-chiang and Pei-an areas in Heilungkiang Province, and in the Fu-sung area in Kirin Province. These lines all provide access to forest regions, and they also serve to improve Chinese logistic capabilities along the Manchurian frontier.

IV. Double Tracking

1. Background

Before the "leap forward" the Chinese Communists placed only moderate emphasis on double tracking the important trunk lines. Instead, their main effort was directed toward extending the rail network into the interior of China for the purpose of opening new areas to development. The demands placed on the rail system during the "leap forward," however, forced the Chinese to increase greatly their effort to double track the more important trunk lines to prevent a breakdown in transportation. During the late 1950's, therefore, the Chinese launched a massive program to double track about 5,900 km of line. If this program had been completed, it would have trebled the length of double track in the country.

2. Areas of Construction

The main thrust of the double tracking program was concentrated in north China and in Manchuria, where the major industrial centers are located. During the late 1950's, the Chinese started to double track three important lines in north China radiating from Peiping -- the east-west line running to the new industrial center at Pao-t'ou and the two north-south trunk lines running to the major sea ports of Canton and Shanghai. In addition, double tracking was started on the two east-west lines running between Shih-chia-chuang and T'ai-yuan and between Cheng-chou and Pao-chi. In Manchuria, double tracking centered

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around Harbin, with work starting on the two lines running from Harbin to Chia-mu-ssu and to Mu-tan-chiang. The Chinese also started construction of a second track from Mukden to the industrial centers of Fu-shun and Pen-ch'i. Although double tracking was also started in the southern part of the country on the line running between Liu-chou in Kwangsi Province and Heng-yang in Hunan Province, the effort was abortive.

3. Rate of Completion

By the end of 1964 the Chinese had completed about 3,500 km of the 5,900 km of double track that was under construction during the "leap forward." This completion rate of almost 60 percent is considerably higher than the rate of about 20 percent for new single-track lines started during the same period, probably because it is easier to widen an existing right-of-way for a second track than it is to construct new right-of-way. Implementation of the retrenchment policy, however, ended Chinese efforts to complete a greater proportion of their double tracking program.

In 1964 the only apparent areas of active double tracking were on a short section of the Peiping-Shanghai line in Shantung Province and possibly on the line between Peiping and Pao-t'ou. The Chinese recently announced that they are rebuilding the line between Shanghai and Nanking, but it is unknown whether provision is being made for a second track. Double tracking in other areas of the country apparently has been halted, even though a great deal of work had been completed on the roadbeds and on the bridges.*

* For the status of double tracking projects in China, see Appendix B.

APPENDIX A

STATUS OF ESTIMATED CONSTRUCTION OF MAIN AND BRANCH RAILROAD LINES IN COMMUNIST CHINA ^{a/} AS OF 31 DECEMBER 1964

Region and Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1964 (Kilometers)	Remarks
Northwest					
Lan-chou (36 03 N 103 41 E) to the Soviet border (Lan-chou to Sinkiang)	Kansu-Sinkiang	1952	2,300	1,900	This line has been completed to Humuli (43 48 N 87 31 E).
Lan-chou to the Tsaidam Basin (Lan-chou to Tsinghai)	Kansu-Tsinghai	1958	1,200	317	Work was halted in early 1961 near Lake Koko Nor.
Kan-t'ung (37 24 N 104 34 E) to Wuwei (37 58 N 102 48 E)	Kansu	1958 or 1959	180	180	This branch line, a bypass around Lan-chou, was apparently completed sometime in 1961.
Ch'eng-tu (30 40 N 104 04 E) to Mao-zen (Ken-ch'uan) (31 28 N 103 35 E)	Szechwan	1959	150	0	This line leaves the Ch'eng-tu - Pao-chi line roughly 30 km north of Ch'eng-tu and is operational to the town of Kuan-shien (31 01 N 103 37 E). Some construction was attempted beyond this point but subsequently was suspended.
Shih-chu-shan (39 10 N 106 45 E) to Chi-lan-t'ai (39 44 N 105 45 E)	Kansu - Inner Mongolian Autonomous Region	1960	140	0	Construction was suspended along the length of the line after much work was completed.
Chiui-ch'uan (39 46 N 98 34 E) to the Ching-t'ieh Mountains	Kansu	1959	100	0	This line was projected to exploit deposits of iron ore in the mountains. Work never progressed much beyond the initial stage of construction.
Pai-yin (36 30 N 104 05 E) to Ching-yuan (36 35 N 104 40 E)	Kansu	Middle of late 1950's	80	19	The line is operational to the Pai-yin copper complex. Beyond the copper complex, a considerable amount of work has been completed on the route, including construction of piers and abutments for a bridge over the Yellow River. Active construction, however, has apparently been suspended.
Lan-chou to Liu-chia Gorge	Kansu	1959	50	20	Work has been abandoned on this branch, which was projected to run to the site of a large hydroelectric project.
Hsi-ning (36 37 N 101 46 E) to Ta-t'ung (37 05 N 101 35 E)	Tsinghai	1958 or 1959	40	40	This branch line to a coal field was completed in 1960.
Total northwest China			4,300	2,940	

a. The railroad lines are listed in order of descending length between terminals. Data have been rounded to three significant digits.

Region and Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1964 (Kilometers)	Remarks
Southwest					
Ch'eng-tu (30 40 N 104 04 E) to K'un-ming (25 04 N 102 41 E)	Szechwan-Yunnan	1958	1,070	175	This line is actively under construction.
Dei-chiang (29 35 N 105 03 E) to K'un-ming	Szechwan-Yunnan	1956	830	310	Work on this line has been indefinitely suspended.
Chungking (29 30 N 106 35 E) to Kwei-yang (26 35 N 106 43 E)	Szechwan-Kweichow	1956	480	140	Work is probably in progress, but the stage of construction is unknown.
Kwei-yang (26 35 N 106 43 E) to K'un-ming	Kweichow-Yunnan	1958	420	100	Work is actively in progress on this line.
Northwest of K'un-ming to Hui-tse (20 21 N 103 25 E)	Yunnan	1958	120	20	This branch leaves the K'un-ming - Chan-i (25 30 N 103 40 E) line roughly 100 km north-east of K'un-ming and runs toward a mining area. By 1962, about 20 km had been completed, with work abandoned on the remainder of the line.
An-ping (24 00 N 102 29 E) to Pa-chieh (24 40 N 102 21 E)	Yunnan	1961 or 1962	30	30	This is a meter-gauge line running to a mining area. At Pa-chieh the line branches, with one spur heading south for 4 km and the other heading west for 4 km.
Total southwest China			2,900	825	
North					
Lo-yang (34 41 N 112 28 E) to I-tu (30 24 N 111 26 E)	Honan-Hupei	1958	660	20	This railroad was intended to be a major north-south line in central China paralleling the Peiping-Canton line. Track has been laid from Lo-yang to I-yang (34 30 N 112 10 E), but work has been suspended on the remainder of the line.
Hankow (30 35 N 114 16 E) to Kuang-chun (32 22 N 111 40 E)	Hupei	1960	400	90	Work has been halted about 90 km northwest of Hankow, near the town of Yun-meng (31 02 N 113 41 E). This line was projected to be part of an 800-km line between Hankow and Sian.
Yuan-p'ing (38 42 N 112 46 E) to Kuo-pei-tien (39 20 N 115 51 E)	Shansi-Hopeh	1958	400	90	Approximately 70 km is operational from Yuan-p'ing to the vicinity of Tsao-lin-ts'un (39 09 N 113 07 E), and 20 km is operational between Kuo-pei-tien and Lai-shui (39 23 N 115 42 E). Since 1961, work has been suspended on the uncompleted portion of the line.

Region and Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals, (Kilometers)	Length Completed by the End of 1954 (Kilometers)	Remarks
North (Continued)					
Tung-kuan (37 21 N 112 28 E) to Hsin-hsiang (35 17 N 113 52 E)	Shansi-Honan	1958	300	200	Between 1958 and 1964, about 200 km of track was laid between Hsin-hsiang and Hsin-yuan (36 22 N 113 42 E). Work was halted on the rest of the line, after considerable construction had been completed.
Hou-ma (35 39 N 111 23 E) to Sian (34 16 N 108 54 E)	Shansi-Shensi	1958 or 1959	300	0	This line was projected to provide a more direct link between the industrial cities of Sian and T'ai-yuan, but work was abandoned after a considerable amount had been completed on the roadbed.
Kalgan (40 50 N 114 56 E) to Chi-ning (40 57 N 113 02 E)	Hopeh - Inner Mongolian Autonomous Region	1958	210	0	Construction of this cutoff, bypassing Ia-t'ung on the Peiping - Pao-t'ou rail line, was started in mid-1958; work, however, was suspended after the roadbed had been largely constructed.
Hangchow (30 15 N 120 10 E) to Ch'ang-hsing (31 01 N 119 54 E)	Chekiang	1959	150	0	Work was abandoned along the entire length of the line before any track had been laid.
P'u-k'ou (32 07 N 118 43 E) to Ho-tei (31 51 N 117 17 E)	Kiangsu-Anhui	1958	130	0	Construction was in a preliminary stage when work was halted. This line was projected to form part of a major trunkline linking Ch'eng-tu with Shanghai.
Yang-ts'un (39 23 N 117 03 E) toward the northeast (to a point approximately 40 00 N 117 22 E)	Hopeh	Probably after 1958	100	0	This line has never been reported, but it could have been projected as a bypass around Pipin from the Tientsin area. Construction, however, has been suspended along its length.
Tzu-jo (Po-shan) (36 29 N 117 50 E) to Hsin-t'ai (35 54 N 117 44 E)	Shantung	1958 or 1959	98	70	This is a branch line leading to mining areas; it has been completed to the vicinity of Lai-wu (36 12 N 117 38 E), about 70 km north of Hsin-t'ai.
Wu-hu (31 21 N 118 22 E) to T'ung-ling (30 56 N 117 50 E)	Anhui	1958	90	50	Work was halted after partial completion. This line was projected to run to the T'ung-kun-shan copper mines south of T'ung-ling.
T'ai-an' (36 12 N 117 07 E) to Lai-wu (36 12 N 117 38 E)	Shantung	1958	70	0	Construction has been suspended along the length of the line.

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S-E-C-R-E-T

Region and Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1964 (Kilometers)	Remarks
North (Continued)					
Fu-li-chi (33 46 N 116 48 E) to Yang-lou (34 15 N 117 01 E)	Anhui-Kiangsu	1958	70	50	A 33-km section has been completed between Fu-li-chi and Sui-ch'i (33 45 N 116 46 E), and a small section has been completed south from Yang-lou. Work, however, has been suspended on the uncompleted portion.
T'ai-an (36 12 N 117 07 E) to Pei-ch'eng (36 15 N 116 46 E)	Shantung	1960	40	40	This is a short branch line to a coal mining area. Work was completed in about 1963.
Total north China			3,040	610	
Southeast					
Hsian-k-t'an (27 51 N 112 54 E) to Tu-yun (26 16 N 107 31 E)	Hunan-Kweichow	1958	870	170	Work was suspended approximately 40 km east of Hsian-hua (27 45 N 111 18 E).
Wu-hu (31 21 N 118 22 E) to Kuei-ch'i (28 17 N 117 11 E)	Anhui-Kiangsi	1958	650	0	Reconstruction was started on both the northern and southern sections of this line, which was partly built by the Nationalists but was dismantled during World War II. Work, however, has been halted.
Yu-shan (28 40 N 118 15 E) to Foochow (26 05 N 119 18 E)	Kiangsi-Fukien	1958	568	0	Construction was abandoned after some work had been started from both ends of the line. The northern terminal was probably changed from Yu-shan to Chiang-shan (28 45 N 118 37 E).
San-shui (23 10 N 112 49 E) to Mao-min (21 41 N 110 51 E)	Kwangtung	1958 or 1959	317	0	Work was suspended after a preliminary stage of construction.
Chang-p'ing (25 18 N 117 24 E) to Hsing-ming (24 08 N 115 43 E)	Fukien-Kwangtung	1958	304	98	This line was projected to run to Canton, but work was stopped in about 1962, after reaching an iron ore mining center near Lung-yen (25 11 N 117 00 E).
Chin-hua (29 07 N 119 39 E) to Wenchow (28 01 N 120 39 E)	Chekiang	1958	253	0	Some construction was started from the Chin-hua terminal before work was suspended.
Ta-yeh (30 05 N 114 57 E) to Sha-ho (29 37 N 115 53 E)	Hupei-Kiangsi	1959	156	0	After considerable construction was completed from both ends of the line, work was suspended.
Mei-shui-k'eng (25 13 N 117 33 E) to Ch'uan-chow (24 54 N 118 35 E)	Fukien	1958	150	20	This line may be under active construction.

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Region and Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1944 (Kilometers)	Remarks
Southeast (Continued)					
P'ing-shih (25 19 N 112 58 E) to Lien-hsien (24 47 N 112 25 E)	Kwangtung	1960	150	10	Work was halted in late 1941 after a considerable amount had been completed on the roadbed. This line was projected to eventually extend to Kuei-lin (25 17 N 110 17 E) in Kwangsi Province, where some work was started but abandoned.
Hsin-yu (27 48 N 114 56 E) to T'ai-ko (26 48 N 114 56 E)	Kiangsi	1958	128	20	A 20-km section was completed south from Hsin-yu to a mining area, but work was abandoned beyond this point.
Hsiang-t'ang area (28 26 N 115 58 E)	Kiangsi	After 1960	120	60	This line is actively under construction near Lo-an (27 24 N 115 44 E).
Lou-ti (27 45 N 111 59 E) to Shao-yang (27 15 N 111 38 E)	Hunan	1958	98	28	This line was completed in mid-1944. It runs to a coal and timber producing area.
Ning-po (Yin-hsien) (29 53 N 121 33 E) to Ch'uan-shan (29 53 N 121 56 E)	Chekiang	1957 or 1958	50	0	The Chinese have been unable to overcome the engineering problems of constructing a rail line across the low marshy plain in the area and have suspended work.
Liu-chou area (24 19 N 109 24 E)	Kwangsi	Probably after 1958	50	0	Approximately 40 km west of Liu-chou is partly completed but abandoned line branches off the main line to the town of Lo-ch'eng (24 47 N 108 54 E).
Total southeast China			3,860	436	
Manchuria (northeast)					
Pei-an (48 16 N 126 36 E) to Hei-ho (50 16 N 127 28 E)	Heilungkiang	After 1960	398	50	The alignment follows an old dismantled line which leads to the Soviet border at Hei-ho. The reconstructed portion of the line is probably operational for about 50 km north of Pei-an, and construction may be in progress further north toward the border.
Wan-kou (41 59 N 126 58 E) toward An-t'u (43 06 N 128 54 E)	Kirin	1958	210	80	An 80-km section has been completed and an 80-km section is under construction east of Pu-sung (42 17 N 127 19 E) in the direction of An-t'u. Reports indicate that this is a standard-gauge forestry line.
Nen-chiang (49 11 N 125 13 E) to Hei-ho	Heilungkiang	Probably 1958	300	125	This dismantled line has probably been rebuilt as far as Ho-lung-men (approximately 49 54 N 125 55 E).

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Region and Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1964 (Kilometers)	Remarks
Manchuria (northeast) (Continued)					
Yen-t'ung-shan (43 17 N 125 59 E) to Lung-wang-miao (N.A.)	Kirin	1958	179	0	Construction of this line was reportedly started in 1958 by 10,000 Youth League members. Work was suspended after much of the roadbed had been completed to the vicinity of Hsiao-tien (42 11 N 126 43 E).
Ch'ang-ch'un (43 42 N 126 21 E) to Ch'ien-kuo-erh-lo-ssu (45 08 N 124 48 E)	Kirin	1958	144	0	Dismantled after World War II, this line was reportedly under restoration in 1958. Work apparently never progressed beyond a preliminary stage.
Ma-chia-ch'eng-tzu (41 22 N 124 20 E) to Huan-jen (41 10 N 124 21 E)	Liaoning	1958	100	0	Construction has been suspended after a considerable amount of work on the roadbed. This line may have been projected to run to Tung-hua (41 41 N 125 55 E) in Kirin Province.
Kirin (43 51 N 126 33 E) to Shu-lan (44 25 N 126 57 E)	Kirin	1958	77	25	Reconstruction of this dismantled line was started in 1958, but work has been halted near the midpoint between the two terminals.
Fa-k'u (42 30 N 123 24 E) toward the southwest	Liaoning	Probably after 1958	40	0	Work has been suspended on a partly completed line that runs approximately 40 km southwest of Fa-k'u.
K'u-lu-ch'1 (50 24 N 124 10 E) northward	Inner Mongolian Autonomous Region	After 1960	40	40	A standard-gauge forestry line may be under construction in this area.
P'o-11 (45 40 N 130 31 E) to Ch'i-tai-ho (45 47 N 130 56 E)	Heilungkiang	1958	31	31	This line probably runs to a mining area, but it may be extended farther east toward the border.
Te-erh-pu-erh (approximately 51 20 N 121 00 E)	Inner Mongolian Autonomous Region	After 1960	N.A.	N.A.	A standard-gauge forestry line may be under construction in this area.
Total Manchuria			1,530	381	
Total Communist China			15,700	4,790	
Of which:					
Started during the "leap forward" (1958-60)			11,400	2,210	
Started during the retrenchment period (1961-64)			590	180	

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APPENDIX B

STATUS OF ESTIMATED CONSTRUCTION OF DOUBLE TRACKED RAILROAD LINES IN COMMUNIST CHINA a/ AS OF 31 DECEMBER 1964

Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1964 (Kilometers)	Remarks
Cheng-chou (34 45 N 113 40 E) to Canton (23 07 N 113 15 E)	Honan-Kwangtung	1958	1,630	614	This is part of the 2,324-km trunk line between Peiping and Canton. The 659-km section between Peiping and Cheng-chou was largely double tracked by 1958, when work started between Cheng-chou and Canton. The line has been generally double tracked to a point roughly 100 km south of the Wu-han complex (39 34 N 114 13 E). Below this point construction was abandoned, after a considerable amount of work had been completed on the route.
Tientsin (39 08 N 117 12 E) to Shanghai (31 14 N 121 28 E)	Hopeh - Shanghai Shih	1958	1,340	794	This line is double tracked most of the way between Tientsin and P'u-k'ou (32 07 N 118 43 E), except for two short sections -- a 10-km section between Tsinan (36 40 N 117 00 E) and Ts'u-yao (35 34 N 117 06 E) and a 104-km section between Puli-chi (21 46 N 116 35 E) and Hsu-fou (32 57 N 117 21 E). The Chinese may actively be working on the Tsinan - Ts'u-yao section, but work on the rest of the line has probably been halted.
Peiping (39 56 N 116 24 E) to Pao-t'ou (40 36 N 110 03 E)	Peiping Shih - Inner Mongolian Autonomous Region	1956 or 1957	830	379	This line is largely double tracked as far as Ts'u-tung (40 05 N 113 18 E). The route between Ts'u-tung and Pao-t'ou has apparently been completed for some time, and the Chinese may be laying a second track.
Cheng-chou to Pao-chi (34 22 N 107 07 E)	Honan-Shensi	1956	684	400	This line is double tracked to Lien-hua-szu (34 33 N 109 45 E). A considerable amount of work for a second track has been completed farther west toward Sian, but active construction has apparently been halted.
Harbin (45 45 N 126 39 E) to Chia-mu-szu (46 50 N 130 21 E)	Heilungkiang	1957 or 1958	506	506	This line has apparently been double tracked along most of the route.
Harbin to Mu-tan-chiang (44 35 N 129 36 E)	Heilungkiang	1958	355	355	This line has apparently been double tracked along most of the route.
Shih-chia-chuang (38 03 N 114 29 E) to Tai-yuan (37 52 N 112 33 E)	Hopeh-Shansi	1957	231	231	This line has been double tracked to Yu-tzu (37 42 N 112 44 E) near Tai-yuan, but work has been abandoned on a bypass around Yu-tzu.

a. The railroad lines are listed in order of descending length between terminals. Data have been rounded to three significant digits.

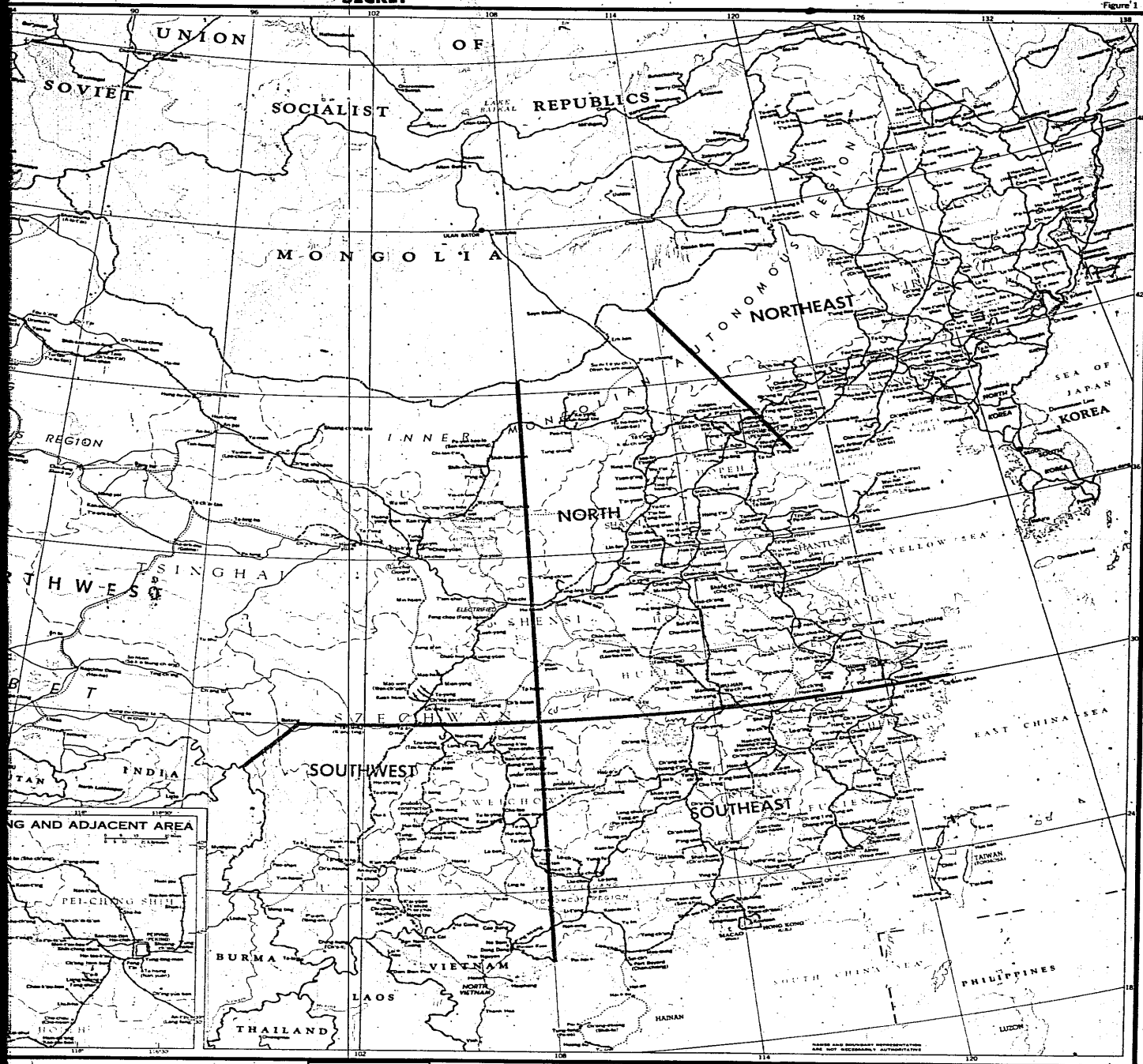
Railroad Line	Province	Start of Construction (Year)	Approximate Length Between Terminals (Kilometers)	Length Completed by the End of 1964 (Kilometers)	Remarks
Chin-chou (41 07 N 121 06 E) to Hsin-li-t'un (42 00 N 122 09 E)	Liaoning	1958	179	50	This line is generally double tracked for about 50 km west of Hsin-li-t'un, with no evidence that work is in progress to double the remainder of the line.
Mukden (Shen-yang) (41 48 N 123 27 E) to Pen-ch'i (41 20 N 123 45 E)	Liaoning	Probably in 1958	84	84	This line is double tracked along the 84 km between Mukden and the industrial center at Pen-ch'i.
Mukden to Pu-shun (41 52 N 123 53 E)	Liaoning	1958	61	61	This line has been double tracked to the industrial center at Pu-shun.
Total			5,200	3,470	

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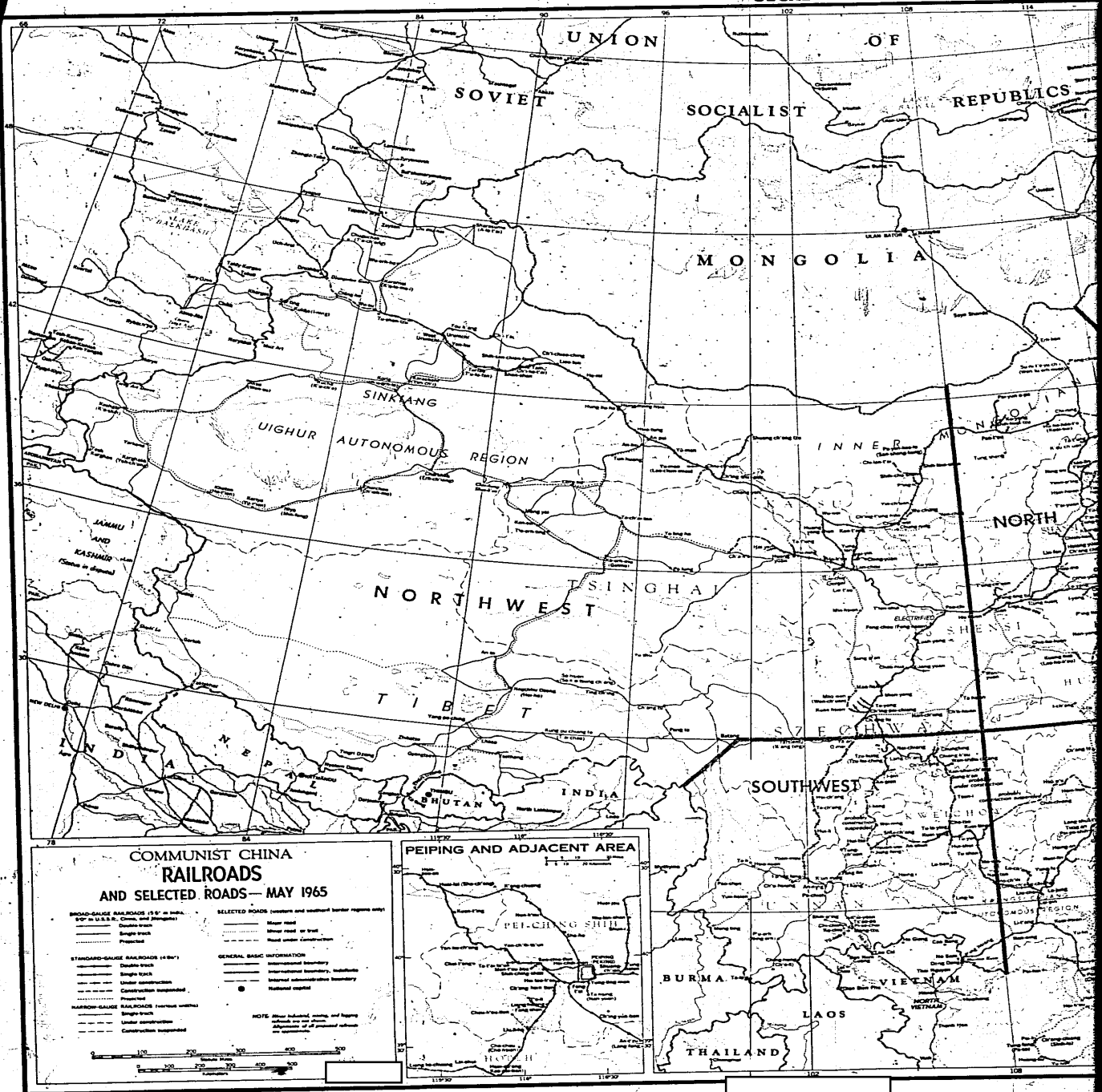
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Figure 1



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